

## **DESCRIPTION OF DRAWING**

Fig. 1 is a Front Elevation View of the carrier frame, deck with anti-scalp rollers and view of the three height adjusters on the carrier frame; it also shows the motor mount bracket between the top of the deck and the bottom of the carrier frame.

Fig. 2 is a Top Plan View of the cutting deck, the carrier frame, the steering yokes mounted to the center of the carrier frame and attached to the offset tow bar.

Fig. 3 is a Right Side Elevation View and shows the carrier frame, rear height adjuster, rigid front wheels, to the left and swivel mounted rear wheels, to the right.

## **GENERAL DESCRIPTION**

A mowing device is shown in Fig. 2, which embodies various of the features of the invention.

The mowing device in Fig. 2 includes a carrier frame 1 used as the means to support and transport the mowing deck 2 which houses all of the bearing housing assemblies and pulleys used to propel the blades, which do the actual cutting.

A mowing deck 2 is attached to the carrier frame 1 by use of two drag bar linkages 3 on either side of the carrier frame 1 and to brackets 4 welded directly on the top and to the front of the cutting deck 2. Also attached to the two front brackets 4 are two height adjustment cranks 5 used to raise, lower and level the front of the mowing deck 2.

To the rear of the mowing deck 2 illustrated in Fig. 3 is the rear height adjustment brackets 6 used to raise and lower the back of the deck by means of the rear height adjustment crank 7 which is attached to the rear tube brace 8 illustrated in Fig. 2.

This rear tube brace 8 is used to reinforce the carrier frame 1 visible in Fig. 2 which also are attached to the rear mounted swivel wheels 9 shown in Fig. 3 mounted on rear of the left and right extensions of carrier frame 1 and are used to support the rear of the mower.

Also mounted to the left and right carrier frame 1 shown in Fig 2 and to the front of the left and right main beams 10 are the rigid front wheels 11 which support the front of mower deck 2.

The rigid front wheels 11 are attached to the carrier frame 1 by an axle 12 that is mounted to the front support channel 13, Fig 1 that is welded to the left and right extensions of support beams 10 and are reinforced by gussets 14 welded to the front support channel 13 and to the left and right support beams 10. As the rigid front wheels, 10 do not swivel and the offset tow bar 15 maneuvers into a sharp turn by a tow vehicle (not shown) the rigid front wheels 11 become the fulcrum that starts the turn by the rear swivel wheels 9. It is possible that in extremely sharp turns the rigid front wheels 10 will counter rotate as the mowing machine does a complete zero turn. It must be noted that the other main contributing factor for the machine to make a zero turn is that the steering yokes 16, Fig 2, are located back of center on the support beams 10 which helps prevent the front wheels from slipping and by location contributes in making the turn. It is important to understand that if the steering yokes are not mounted to the center of the carrier frame, not only will it not stay square when it is being towed but also it will not turn correctly. It is to be noted that by making the front wheels 10 rigid and the rear wheels 9 swivel in the rear of the device. Is that when towed on the right side of a zero turn machine the left front rigid wheel 10 will usually track just to the right of the zero turn machines right rear wheel eliminating uncut strip of turf. The offset tow bar 15 is adjustable to accommodate different width size tow-machine decks.

### Background of the Invention

The invention relates to a mowing device that is motorized and has special design features that allow it to be towed behind almost any type of towing machine but especially "zero-turn" radius mowers. The problem created by towing any offset mower behind zero turn mowers is that with the current way they are being towed and steered they will leave an uncut strip of grass in the turns which of course is unacceptable.

No other machines have addressed the problem of the uncut strip of grass in right turns. None of the tow units currently being manufactured have addressed this problem.

As most users of commercial mowers use zero turn mowers and as most of the users of the mowers are using them for their productivity, it is very apparent that they could use an offset tow mower that would also do a zero turn as our mower does and will not leave an uncut strip that they would be able to greatly increase their productivity. The tow mower could double their productivity and reduce their cost of operation.

### Summary of the Invention

The invention provides for a fully self-contained mower machine, having its own reciprocating air-cooled engine. Attached to the engine is an electro-clutch for positive engagement of the three blades and adjustable backside idler is used to keep the belt tight on the bearing housing pulleys. Incorporating a carrying frame for carrying the deck and motor. This allows the mower device to be extremely maneuverable. It can be towed up to 8 mph while mowing. The carrier frame also has three height adjustments for setting the cutting height on the mowing deck. Further included on carrier frame are rigid front wheels, swivel mounted back wheels to help create the zero turn and center mounted steering yokes connected mid-way back on the carrier frame. The steering yokes are also connected toward the front of the carrier frame and the front of the deck to the offset tow bar, which is paramount in making the zero turn. It is important to understand that if the steering yokes are not mounted to the center of the carrier frame not only will it not stay square when it is being towed but also it will not turn correctly. If the steering yokes are mounted to the front of the carrier frame, the front of the mower is likely to slide instead of making the turn and the steering becomes sluggish at best.

It is to be understood that this mowing machine is intended to be used while being towed by another mowing machine with its own cutting deck.